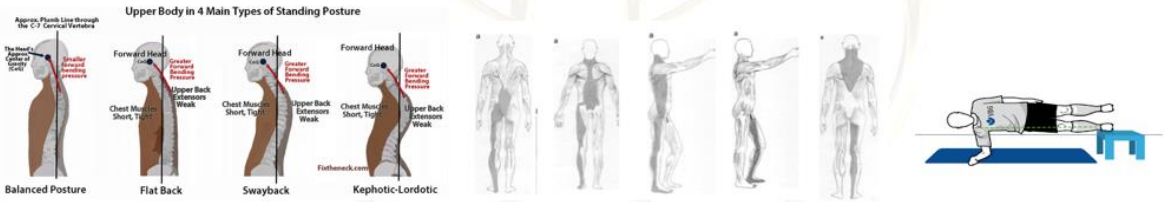

Athlete Robustness Assessment Report

Athlete:

Date Conducted:

Conducted by Synergie Coaching

Start with Why?
Why bother with a strength & conditioning programme? Consider that from three perspectives – General Global Athleticisms or moving better; Injury Prevention because you are moving better & are stronger and Performance Impact because you are moving better, are stronger, so probably more efficient.

Remember that peak muscle mass in females is around 20 years of age & around 25 in males and that males start to have reduced testosterone & growth hormone after the age of 30.

On average females tend to have 40-45% less upper body strength and 25-33% less lower body strength to equally trained males, mainly due to muscle size.

There is a lot of research showing how a strength & conditioning programme can benefit triathletes from a global athleticism, injury prevention and performance perspective. Berryman et al (2017) & Baldwin et al (2021) discussed it in relation to middle & long distance athletes. Etxebarria et al (2019) & Luckin-Baldwin et al (2021) spoke about it in respect of competition readiness and improved economy.

Bishop (2018) & Pyper et al (2018) detailed the challenges that swimmers & triathlete have in applying force, given that you are trying to produce power in an unstable environment. You need to be able to achieve a good catch position and be stable throughout your swim stroke.

Stevens et al (2019) & Luckin – Baldwin et al (2021) showed that strength training can improve cycling efficiency. This enables athletes to dynamically mount the bike; to cover breaks or break away, as well as being flexible enough to reduce wind resistance.

Novacheck (1998) & Gamble et al (2015) discussed the need to be able to run with a strong posture, good knee flexion & hip extension.

This report is prepared from a strength & conditioning perspective considering specific movement patterns & screens, as well as the requirements of your sport.

It is based on observation & basic measurements and any recommendations should be considered with that in mind.

The normative data tables shown have been adapted from the original references/sources shown.

Quick Summary

The table shown provides a quick summary of your assessments; **Green** means you performed it well; **Amber** means it's acceptable but could be improved; **Red** means that it needs to be addressed.

Screen	Score/Time	Comments
Static Balance (L)		
Static Balance (R)		
Functional Movement Screen (FMS)		
Deep Squat		
Hurdle Step		
In Line Lunge		
Shoulder Mobility		.
Active Leg Raise		
Trunk Stability Push Up		
Rotary Stability		
	/21	Global athleticism score indicates that you move well enough to be externally loaded.
Flexibility/Mobility		
Ankle		
Knee to Wall (L)		Looking for at least 10cm
Knee to Wall (R)		Lack of ankle mobility will affect running efficiency.
Hip Mobility		
Lying FABER (L)		
Lying FABER (R)		
		X-ref with knee position in Static Balance & Active Leg Raise in FMS.
Seated FABER (L)		X-ref with lying FABER
Seated FABER (R)		
Shoulder Mobility		
Shoulder Flexibility		
Isometric Strength - Quad		
Static Wall Sit (L)		
Static Wall Sit (R)		
Abductor & adductor Strength - Modified Bunkie		
Lateral Line (L)		
Lateral Line (R)		
Medial Line (L)		

Medial Line (R)		
Grip Strength (L)		
Grip Strength (R)		
Dead Hang		
Muscular Endurance		Completed at 120hz
Anterior Tibialis Pulses		
Straight Leg Calf Raise (L)		
Straight Leg Calf Raise (R)		
Hamstring Bridge (L)		
Hamstring Bridge (R)		
Consecutive Push Ups		
Side Plank (L)		
Side Plank (R)		

Recommendations & considerations:

Having done the screening, you now have some baseline information to work on.
The suggestions shown will target the aspects of the screening that are shown in **Red.**

I have used anatomical names for the muscles, so you can share with any athlete support personnel you have use, coaches, physios, etc. and so that we are all using a common language.

I try to use video from reputable sources such as the National Association of Sports Medicine (NASM) as they do a Corrective Exercise Specialist Course which forms part of some UK University MSc programmes or James Dunne, a qualified physio. Use of videos is not an endorsement, and they are used for indication only.

Red areas that you need to improve:

There are asymmetries but at this stage I would look at working both sides the same to try to balance things up, rather than doing xx% on the right compared to xx repetitions on the left.

Mobility:
Massage Gun/Foam Roll before you stretch.
Have a look at https://youtu.be/ddd9IvPn8jI and their series on how to foam roll specific areas.

Hip Mobility
https://youtu.be/DdqgjV4Ajhs (shorter option)
https://youtu.be/SNXlaqsUJMY (longer option)

Try to do this every other day.

Strengthening Exercises to consider:
Looking to build to 30 continual & controlled reps, once you can managed a couple of weeks of completing 2-3 sessions of 30 continual reps then we can move the programme on.

1. **Adductor Strength**
   https://youtu.be/VaDL_zBnFlY

2. **Before a bike or run - to work on hip stabilisation & adductor strength**
   - https://youtu.be/X-18hE06vJ8

3. **Quad strength & hip stabilisation** - https://youtu.be/fFRsP4UqEFE

4. **Shoulder Conditioning** https://youtu.be/gmmIizbbiqI

5. **Dead Hangs – aiming for 2 minutes.**

Assessments.

Single Leg Stance (SLS)

The Single Leg Stance (SLS) Test is used to assess static postural and balance control. The SLS Test is a balance assessment that is widely used in clinical settings to monitor neurological and musculoskeletal conditions. Abnormal values may indicate conditions such as peripheral neuropathy, intermittent claudication, or other conditions that may impair balance.

Performed with eyes open and hands on the hips or more challenging raise arms in the air to assess shoulder mobility & asymmetry as well as thoracic spine mobility. This can be cross-referenced with the Deep Squat movement pattern in the Functional Movement Screen (FMS).

- Stand on one leg unassisted.
- Raise arms overhead with palms facing each other.
- Time begins when opposite foot leaves the ground; time stops immediately when opposite foot touches the ground.
- Look to keep the knee above the hip whilst maintaining good postural alignment, no swaying back.

Key muscles used in SLS are the hip flexors – psoas major & iliacus, sometimes called the iliapsoas; pectineus, sartorius & rectus femoris. Sitting for too long can shorten these muscles, which can lead to a pelvic tilting and lumbar hyperlordosis (sway back). Shortened muscles cannot generate as much power as lengthened muscles.

Time to completion	**Left Leg Raised**	**Right Leg Raised**

	Poor	Below Average	Average	Above Average	Excellent
Male (16-18)	< 20s	21-30	31-40	41-50	50+
Female (16-18)	< 10	11-20	21-30	31-40	40+

Age	Time (Eyes Open)	Time (Eyes Closed)
18-39	43	24-29
40-49	40	24-29
50-59	37	21
60-69	27	10
70-79	18	4
80-89	6	2

Functional Movement Screen

The Functional Movement Screen (FMS) is predominately used nowadays as a global athleticism movement screen rather than as a predictor of injury or a performance indicator.

Your score on the Deep Squat was .

The deep squat is a test that challenges total body mechanics; it is used to assess bilateral, symmetrical, functional mobility of the hips, knees, and ankles. The dowel held overhead assesses bilateral and symmetrical mobility of the shoulders and thoracic spine.
The dowel held overhead assesses bilateral & symmetrical mobility of the shoulders and thoracic spine.
The deep squat requires closed kinetic chain dorsiflexion of the ankles, flexion of the knees & hips and extension of the thoracic spine, as well as flexion and abduction of the shoulders.

A low score on this assessment can be the result of several factors. Limited mobility in the upper torso can be attributed to poor glenohumeral and thoracic spine mobility. Limited mobility in the lower extremity including poor closed kinetic chain dorsiflexion of the ankles or poor flexion of the hips may also cause poor test performance. Limited stability/motor control of the core can also affect test performance.

No major issues observed/issues observed were

Your score on the Hurdle Step was .

The hurdle step assesses stride mechanics and requires coordination & stability between hips and torso as well as single leg stance stability. It assesses bilateral functional mobility and stability of hips, knees and ankles.
The hurdle step assesses bilateral functional mobility and stability of the hips, knees, and ankles.
The standing leg requires stability of ankle, knee & hip as well as maximum closed kinetic chain extension. The moving leg requires maximum hip flexion & dorsiflexion of the ankle.

Performing the hurdle step test requires stance leg stability of the ankle, knee, and hip as well as maximal closed kinetic chain extension of the hip. The hurdle step also requires step leg open kinetic chain dorsiflexion of the ankle and flexion of the knee and hip. In addition, the athlete must also display adequate balance because the test imposes a need for dynamic stability.

Reduced performance during this assessment can be the result of several factors. It may simply be due to poor stability of the stance leg or poor mobility of the step leg. Imposing maximal hip flexion of one leg while maintain hip extension of the opposite leg requires the athlete to demonstrate relative bilateral, asymmetric hip mobility.

Both feet caught the cord which indicates a lack of hip flexor mobility or strength.
Alignment was lost between knee and ankle on the right leg when stepping over with the ankle moving inwards from the knee and the knee moving away from your body line on each side.

Knees moving out & feet turning in indicate (weak/lengthened) underactive muscles being

- Piriformis
- Bicep Femoris
- TFL
- Glute Med

and implies (tight/short) overactive muscles being

- Adductors
- Medial Hamstring
- Glute Max

Your inline lunge score was .

The in-line lunge attempts to place the body in a position that will focus on the stresses simulated during rotational, decelerating, and lateral type movements. The in-line lunge is a test that places the lower extremities in a scissor style position, imposing a narrow base of support that challenges the trunk and extremities to resist rotation and maintain proper alignment. This test also assesses hip and ankle mobility and stability, quadriceps flexibility, and knee stability.

The ability to perform the in-line lunge test requires stance leg stability of the ankle, knee, and hip as well as controlled closed kinetic chain hip abduction. The in-line lunge also requires step leg mobility of hip abduction, ankle dorsiflexion, and rectus femoris flexibility. The athlete must also display adequate balance due to the lateral stress imposed.

Poor performance during this test can be the result of several factors. First, hip mobility may be inadequate in either the stance leg or the step leg. Second, the stance leg knee or ankle may not have the required stability as the athlete performs the lunge. Finally, an imbalance between relative adductor weakness and abductor tightness OR abductor weakness and adductor tightness in one or both hips may cause poor test performance. Limitations may also exist in the thoracic spine region, which may inhibit the athlete from performing the test properly.

No major issues observed/issues observed were

Your Shoulder Mobility score was .

The shoulder screen assesses bilateral shoulder Range of motion (RoM); both internal rotation with adduction and external rotation with abduction. The test requires scapular mobility and thoracic spine extension.
The ability to perform the shoulder mobility test requires mobility in a combination of motions including abduction/external rotation, flexion extension, and adduction/internal rotation. This test also requires scapular and thoracic spine mobility.
In the arm coming over the top there is shoulder flexion, external rotation, and abduction. In the lower arm, coming up the back, there is extension, internal rotation, and adduction.

- First measure the distance from the athlete's distal wrist crease to the end of their longest finger. This will be referred to as their hand length measurement.
- Next, athlete stands with feet together and makes a fist.
- Reach both hands directly out to the sides, now simultaneously reach one fist behind the neck and the other one behind the back, trying to get the fists as close as possible to each other.
- Maintain good posture and do not let the head drop forward.
- Don't try to shuffle the fists closer to each other; where they land during the initial reach is where you want to measure.
- The measurement between the ends of the two fists is your gap measurement.

Poor performance during this test can be the result of several causes, one of which is the widely accepted explanation that increased external rotation is gained at the expense of internal rotation in overhead throwing athletes. In addition, excessive development and shortening of the pectoralis minor or latissimus dorsi muscles can cause postural alterations including rounded or forward shoulders. Finally, scapulothoracic dysfunction may be present, resulting in decreased glenohumeral mobility secondary to poor scapulothoracic mobility or stability.

Both arms were within 1 hand width, R arm coming up the back didn't move quite as well as the L.

Your Active Straight Leg Raise score was .

The active straight leg raise assesses hamstring & calf complex flexibility as well as pelvis stability. Leg that remains on the floor gives an indication of postural stability; leg that is moving demonstrates mobility.

The ability to perform the ASLR test requires functional hamstring, gluteal, and iliotibial band flexibility, all of which are required for training and competition. This is different from passive flexibility, which is more commonly assessed. The athlete is also required to demonstrate adequate hip mobility of the opposite leg and pelvic and core stability.

Poor performance during this test can be the result of several factors. First the athlete may lack functional hamstring flexibility. Second, the athlete may have inadequate mobility of the opposite hip, stemming from iliopsoas inflexibility associated with an anteriorly tilted pelvis. If this limitation is gross, true active hamstring flexibility will not be realized. A combination of these factors will demonstrate an athlete's relative bilateral, asymmetric hip mobility.

Like the hurdle step test, the ASLR test reveals relative hip mobility; however, this test is more specific to the limitations imposed by the muscles of the hamstrings and the iliopsoas.

L leg moved better than R, both only getting the ankle to the pole.

This indicates

- Reduced pelvic control between automatic (static leg) & conscious (moving leg) tasks.
- Limited hip extension
- Poor hamstring flexibility

Your Trunk Stability Push Up score was .

The trunk stability push up tests the ability to stabilize the spine in an anterior and posterior plane during a closed chain upper body movement.

The ability to perform the trunk stability push-up requires symmetric trunk stability in the sagittal plane during a symmetric upper extremity movement. Many functional activities in sport require the trunk stabilizers to transfer force symmetrically from the upper extremities to the lower extremities and vice versa. Movements such as rebounding in basketball, overhead blocking in volleyball, or pass blocking in football are common examples of this type of energy transfer.

If the trunk does not have adequate stability during these activities, kinetic energy will be dispersed and lead to poor functional performance, as well as the potential for micro traumatic injury.

Poor performance during this test can be attributed to poor stability of the trunk/core stabilizers.

On the initial screen your shoulders came off the floor first, this indicates

- overactive or tight upper Trapezius,
- Levator Scapulae and
- Sternocleidomastoid

with weaker, under-active

- mid & lower Trapezius and
- Serratus Anterior.

Your Rotary Stability score was .

The rotary stability test is a complex assessment of neuromuscular coordination and multi-plane stability.

The ability to perform the rotary stability test requires asymmetric trunk stability in both the sagittal and transverse planes during asymmetric upper and lower extremity movement. Many functional activities in sport require the trunk stabilizers to transfer force asymmetrically from the lower extremities to the upper extremities and vice versa. Running and exploding out of a down stance in track and football are common examples of this type of energy transfer. If the trunk does not have adequate stability during these activities, kinetic energy will be dispersed (lost), leading to poor performance and increased potential for injury.

Poor performance during this test movement can be attributed to poor stability of the trunk (core) stabilizers. This is indicative of acceptable symmetrical trunk stabilisation.

Your overall score was /21

Ideally you want to score 14+ to be commence a progressive training programme with external loading.

Flexibility

Ankle Flexibility - Lunge Test (cm). [Knee to wall]

Athlete stands facing wall. Keeping heel of front foot on the ground they bend the front leg until the knee touches the wall. Rear foot heel can come off floor. Make sure hips stay square & don't rotate towards wall.

If big toe is 10cm or less away from the wall they need to work on ankle mobility. Ideally want 13cm+. Cross ref by measuring angle of anterior tibia (shin) to vertical. Anything less that 38° is restricted.

Asymmetries less than or equal to 1.5cm are within an acceptable range.

Distance from big toe to wall	Score
<9cm	Poor
9-12cm	Average
>12cm	Good

Left Leg (cm)	Right Leg (cm)

Lying FABERs Assessment (cm). [Hip extensor assessment].

This assesses the range of motion available through the gluteal muscles at the back of the hip. Tightness here can prevent proper hip extension as well as restricting the ability to lift the leg with the hip flexor.

Athlete lies on their back on the floor, with one leg flexed so the outside of the left ankle lies on top of the right knee (Figure of 4). Hold the right hip down and measure the distance, in cm, between the floor and the outside of the left knee, part nearest to the floor. Repeat on the other side.

Distance from floor	Scoring
>20cm	Poor
15-20cm	Average
<15cm	Good

Left Leg (cm)	Right Leg (cm)

Modified FABER; Seated Ankle to Knee (cm). [Hip extensor assessment.]

Athlete to sit on bench, with feet on floor whilst maintaining good posture & place outside of left ankle on top of right knee without leaning back or any other compensation. Shin should be parallel with the floor. Use goniometer to quantify degrees from horizontal. Repeat other side. Compare scores on a test-retest basis.

Left Leg	Right Leg

Shoulder Mobility (cm).

This assesses shoulder mobility. This can often be restricted through thoracic spine mobility & anterior muscular tightness.

Athlete lies face down with arms extended & holding a broom handle/bar in an overhand grip (back of hand to ceiling, palms towards floor).

Arms are shoulder width apart & chin stays on floor. Keeping chin on floor & fingers/knuckles facing forward NOT backwards or to roof slowly raise arms keeping them straight.

Distance between floor & underside of wrist is measured.

Distance from floor to underside of wrist	Score
<10cm	**Poor**
10-20cm	**Average**
>20cm	**Good**

Shoulder Score (cm)	

Shoulder Rotation, Abduction & Adduction (cm). [Conducted in FMS]

- The shoulder mobility screen assesses bilateral shoulder range of motion, combining internal rotation with adduction and external rotation with abduction. It also requires normal scapular mobility and thoracic spine extension. The ability to perform the shoulder mobility test requires shoulder mobility in a combination of motions including abduction/external rotation, flexion/extension and adduction/internal rotation. It also requires scapular and thoracic spine mobility.

Distance	Scoring
>1.5 x hand width	Poor
Within 1 - 1.5 hand widths	Average
< hand width	Good

Left Arm Over Top – score & comment	Right Arm Over Top –score & comment
Hand width	Conducted in FMS Screen

Isometric Strength

Static Single Leg Wall Sit (s).

- The athlete assumes a sitting position with their back against the wall, feet flat on the ground and a 90° angle at the hips and knees.
- When athlete is in this position the lift their left foot approximately 5cm off the ground and timing commences.
- If the heel or foot touches the floor the timing stops as the assessment is concluded.

Left Leg (s)	Right Leg (s)

	Poor	Below Av	Average	Above Av	Good
Male	<30s	30-57s	58-75s	76-102s	>102s
Female	<20s	20-35s	36-45s	46-60s	>60s

Modified Bunkie Test (s).

Assessment functional strength. Athlete is asked to hold each position for >45. Assess on a test-retest basis.

		Time Held (s)
Lateral Stabilising Line. Side plank position with both feet on top of bench, raises top foot away from bench & holds.	**L**	
The lateral stabilizing line assesses the function and endurance of the sternocleidomastoid, upper trapezius, latissimus dorsi, serratus anterior, internal/external obliques, gluteus medius, tensor fascia latae, vastus lateralis, lateral gastrocnemius and soleus, and peroneus longus, brevis and tertius	**R**	
Medial Stabilising Line. Side plank position with one foot on top & one foot underneath bench. Athlete has to keep foot touching underside of bench.	**L**	
The medial stabilizing line assesses the function and endurance of the adductor longus, gracilis, sartorius, pectineus, and medial gastrocnemius and soleus	**R**	

Poor	Below Average	Average	Fair	Good
<29.9s	**30-34.9s**	**35-39.9s**	**40-44.9s**	**45s+**

Grip Strength (kgs)

Grip strength is a long-recognised component of muscular fitness, with forearm & hand flexor muscles involved in gripping with the wrist extensors providing stability.

- Hold your arm with your elbow bent at a 90-degree angle & forearm parallel to the floor.
- Ensure a gap between elbow & body.
- Squeeze the dynamometer as hard as possible.
- Apply grip force in a smooth motion. Avoid jerking.
- Have a recovery period of 60s before repeating.
- Repeat twice more for a total of three times.
- Your grip strength is the average of the three readings.

For general population reduce the value by 10% when over 50 years of age.

Left Hand (kgs)	Right Hand (kgs)

M	Poor	Average	Good	Excellent
Dominant Hand	41-47	48-61	62-69	>70
Non-Dominant	39-42	43-55	56-67	>68
F				
Dominant Hand	22-24	25-37	38-40	>41
Non-Dominant	18-21	22-33	34-36	>37

Dead Hangs (s)

This is an assessment of isometric endurance in forearms & fingers. Dead hangs also target finger endurance in relation to bodyweight, so could be classed as a finger flexion movement, as well as grip exercise.
Some research indicates that dead hangs may be beneficial for older age mobility.
As well as a strength indicator it is also a good exercise to release spinal tension.
To perform a dead hang, follow these steps:

- Use a secure overhead bar. Use a step or bench so you can easily reach the bar with your arms. **You don't want to jump straight into a dead hang.**
- Grip the bar with an overhand grip (palms facing away from you). Aim to keep your arms shoulder-width apart.
- Move your feet off the step or bench so you're hanging on to the bar.

- Keep your arms straight. Don’t bend your arms and stay relaxed.
- Hang for at least 10 seconds and progress your hang time to at least 60s before progressing exercise.
- Slowly step back onto the step or bench before releasing your arms. Repeat up to 3 times, if you wish.

Progression from Dead Hang to Pull Up.

- Deadhang until you can do consistently hang for 60 seconds
- hang repeatedly with your arms at 90 degrees (aka flexed hang) for 30 seconds.
- hang repeatedly with your chin above the bar for 30 seconds.
- at this point start the Pull Ups.

Time to completion	

Age Range	Average Dead Hang Time
10-15	10-30 seconds
16-20	30-45 seconds
21-25	45-60 seconds
26-30	60-90 seconds
31-35	45-60 seconds
36-40	30-45 seconds
41-45	30-45 seconds
46-50	20-35 seconds
51-55	15-30 seconds
56-60	10-20 seconds
61-65	5-15 seconds
66-70	5-10 seconds

Power
Muscular Endurance

Seated Pulses (s). [Anterior Tibilais].

- Sitting down with feet on floor & shins straight, knees bent at 90° "pulse" the feet, together at 90Hz (90bpm on the metronome).
- Keep the feet moving together in a smooth motion with the toes pointing upwards & back towards the shins.
- Heels remain on the ground but the ball of the foot does not touch the floor.
- Record when feet move out of synch & when athlete stops altogether.

Time when noticeable reduced Range of Motion (s) & assessment concluded	**s**

Single Leg Straight Leg Calf Raise to Metronome (s/reps). [Gastrocnemius]

- Stand on one leg with ball of foot on step in front of wall.
- Place one finger of each hand on wall at head height
- Start at full Plantar flexion.
- Lower through full ROM
- Maintain steady rhythm with no bouncing.
- **Use a metronome at 60 Hz to pace - 1 second up and down phases.**

If the athlete starts to show any knee extension, hip hitching, excessive hand pressure or limited ROM they will be cued to stop and given 1 warning. The second time one of these is observed the test is over.

	Time to completion (s)	**Repetitions**
Left Leg		
Right Leg		

Poor	**Average**	**Good**
10 -19 repetitions	**20 -29 repetitions**	**30+ repetitions**

Single Leg Hamstring/Glute Bridge Test (s/reps).

- This test is for the working capacity (endurance) of the hamstring muscles. It is not a maximal strength assessment.
- It will highlight any left to right imbalance as well as whether the athlete can reach a threshold level of fatigue resistance.
- Lie on back with arms across chest and shoes on, place heel of one leg onto a 60cm bench or box – working leg knee slightly bent, free leg bent with thigh vertical.
- Tester to kneel by the athlete and establish full hip extension by observing a bilateral raise and then leave hand at level where hips touched in full extension – as a guide for athlete during test to control range of motion.
- Buttocks may briefly touch floor but not rest there or bounce of the ground, then lift hips pushing through the heel until full hip extension touching testers hand **with a rhythm of 1 sec up and 1 sec down can use a metronome at 60 beats per minute to pace.**
- No swinging of free leg, no back hyperextension or trunk movement to gain momentum. Do not allow jerky movement or rebounding off the floor Count number of fully completed repetitions.

	Time to completion	**Repititions Completed**
Left Leg		
Right Leg		

Poor	**Average**	**Good**
10 -19 reps	**20 -29 reps**	**30+ reps**

Consecutive Push/Press Up Test (s/reps).

- An assessment of athletes' upper body muscular endurance.
- Athlete does consecutive press ups at a tempo of 30 push ups per minute **until failure**. **Use a metronome at 60 Hz to pace - 1 second up and down phases.**
- Press ups and time taken is recorded & compared on a test-retest basis, as well as being compared to normative data tables.
- Remember in a full press up position you are lifting ~75% of your body weight; in the pivot push up on your knees with feet up, you are lifting about 60% of your body weight.

Normative Range for Females based on Age. (Full Press Up)

Age/Rating	Poor	Below Average	Average	Good	Excellent
8	4	7	9	13	19
9	5	8	12	15	20
10	5	9	13	17	20
11	5	8	12	15	20
12	3	7	11	15	21
13	3	6	11	15	22
14	3	6	11	17	22
15	4	9	15	18	23
16	4	10	15	18	26
17	5	12	16	19	28

Normative Range for Females based on Age (Full Press up)

Age	Poor	Below Av.	Average	Above Av.	Good	Excellent
17 - 19	<6	6-10	11-20	21-26	27-35	>35
20 - 29	<7	7-11	12-22	23-29	30-36	>36
30 - 39	<5	5-9	10-21	22-29	30-37	>37
40 -49	<4	4-7	8-17	18-24	25-31	>31
50 - 59	<3	3-6	7-14	15-20	21-25	>25
60+	3	3-5	6-16	17-23	24-30	>30

Normative Data for Males (Full Press Up)

Age/Rating	Poor	Below Average	Average	Good	Excellent
8	4	7	9	13	19
9	5	8	12	15	20
10	7	11	14	18	25
11	7	12	16	23	30
12	7	13	18	25	34
13	9	16	23	30	40
14	11	18	25	32	42
15	15	25	30	32	44
16	18	27	32	37	46
17	22	30	36	45	55

Normative Data for Males (Full Press Up)

Age	Poor	Below Av	Average	Above Av	Good	Excellent
17 - 19	<11	11-18	19-34	35-46	47-56	>56
20 - 29	<10	10-16	17-29	30-38	39-47	>47
30 - 39	<8	8-12	13-24	25-33	34-41	>41
40 -49	<6	6-10	11-20	21-27	28-34	>34
50 - 59	<5	5-8	9-17	18-24	25-31	>31
60 - 65	<3	3-5	6-16	17-23	24-30	>30

Time to Completion	Repetitions

Side Plank (s).

- Athlete adopts a side plank position with trainers on.
- Good alignment should be observed between legs and spine.
- Athletes should be able to hold position for at least 90s each side.
- Do one side. 2 minutes recovery then do other side.

Time	Score
<59s	Poor
60-119s	Average
>120s	Good

Left Side Plank time to failure	Right Side Plank time to failure.

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